

What is claimed is:

1. A switching apparatus arranged to receive data signals on at least two transmission paths and to output data from  
5 a selected one of said transmission paths, the apparatus including a selector mechanism for selecting between transmission paths, wherein the apparatus is arranged to align the respective data signals received on said transmission paths so that said selector mechanism is able  
10 to select between corresponding elements of said received data signals.
2. An apparatus as claimed in Claim 1, wherein said signal alignment is achieved by buffering the received  
15 data signals.
3. An apparatus as claimed in Claim 1, wherein the apparatus is arranged to receive data signals on a main transmission path and a stand-by transmission path, each  
20 path carrying, in use, a substantially identical data signal.
4. An apparatus as claimed in Claim 1, wherein each element of each received data signal is associated with a  
25 tag indicating the position of the element in the data signal, the selector mechanism being arranged to select between elements having corresponding tags, and to cause said output data to comprise said selected elements in sequential order according to the positional information  
30 indicated by the respective tags.
5. An apparatus as claimed in Claim 1, wherein said signal elements are comprised in a respective data frame,

the selector mechanism being arranged to select between corresponding signal elements on a frame-by-frame basis.

6. An apparatus as claimed in Claim 1, wherein said  
5 signal elements comprise data containers.

7. An apparatus as claimed in Claim 4, wherein said tags comprise virtual concatenation overhead bits.

10 8. An apparatus as claimed in Claim 1, wherein said selector mechanism is arranged to compare the quality of the data signals received on said transmission paths and to select the transmission path of better quality.

15 9. An apparatus as claimed in Claim 2, wherein the apparatus is arranged to store the elements of each received data signal in a respective data buffer.

20 10. An apparatus as claimed in Claim 9, wherein the data buffers are implemented in one or more memory devices.

11. An apparatus as claimed in Claim 9, wherein the data buffers are implemented in Random Access Memory (RAM).

25 12. An apparatus as claimed in Claim 9, wherein the selector mechanism comprises a switching controller arranged to select between transmission paths, and a switch device arranged to retrieve one or more signal elements from the data buffer corresponding to the  
30 selected transmission path and to cause the or each retrieved signal element to be output.

13. An apparatus as claimed in Claim 12, wherein the switching controller is arranged to select between transmission paths in respect of each signal element.

5 14. An apparatus as claimed in Claim 13, wherein the switching controller is arranged to compare the quality of corresponding respective signal elements from each received data signal and to cause the switch device to retrieve the signal element having better quality.

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15. An apparatus as claimed in Claim 12, wherein the switch device comprises a memory reading device.

16. An apparatus as claimed in Claim 1, wherein the  
15 apparatus is arranged to store information concerning the quality of at least one element of each received data signal.

17. An apparatus as claimed in Claim 1, being arranged  
20 for use in a synchronous transmission system.

18. A synchronous transmission apparatus comprising a switching apparatus as claimed in Claim 1.

25 19. A synchronous transmission system comprising a first synchronous transmission apparatus arranged to transmit data signals across a network on at least two transmission paths; and a second synchronous transmission apparatus arranged to receive said data signals on said at least two  
30 paths, wherein the first synchronous transmission apparatus is arranged to associate each element of each transmitted data signal with a tag indicating the position of the signal element within the data signal, and wherein

said second synchronous transmission apparatus comprises a switching apparatus according to Claim 1.

20. In a switching apparatus arranged to receive data  
5 signals on at least two transmission paths and to output  
data from a selected one of said transmission paths, a  
method of switching between transmission paths, the method  
comprising aligning the respective data signals received  
on said transmission paths; and selecting between  
10 corresponding elements of said received data signals.

21. In a synchronous transmission system comprising a  
first synchronous transmission apparatus arranged to  
transmit data signals across a network on at least two  
15 transmission paths; and a second synchronous transmission  
apparatus arranged to receive said data signals on said at  
least two paths, a method of switching between  
transmission paths, the method comprising: associating, at  
said first synchronous transmission apparatus, a tag with  
20 each element of said data signals, the tag indicating the  
position of the signal element within the data signal;  
aligning, at said second synchronous transmission  
apparatus, the respective data signals received on said at  
least two transmission paths; selecting, at said second  
25 synchronous transmission apparatus, between signal  
elements having corresponding tags; and outputting said  
selected signal elements in sequential order according to  
the positional information indicated by the respective  
tags.